

# LEV S. TSIMRING

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Department of Bioengineering  
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Research Foci: Biological Physics  
Pattern Formation  
Systems/Synthetic Biology  
Nonlinear Dynamics

Education: B. S. Physics, Gorky State University, Gorky, USSR, 1980  
Ph.D. Physics, Institute of Oceanology, Moscow, USSR, 1986

## **POSITIONS:**

- 2021 - present: Distinguished Research Scientist,  
Synthetic Biology Institute,  
University of California, San Diego
- 2010 - 2021: Associate Director,  
BioCircuits Institute,  
University of California, San Diego
- 2020 - 2021: Distinguished Research Scientist,  
BioCircuits Institute,  
University of California, San Diego
- 2009 - 2020: Research Scientist,  
BioCircuits Institute,  
University of California, San Diego
- 1999 - 2009: Associate Director,  
Institute for Nonlinear Science,  
University of California, San Diego

1998 - 2009: Research Physicist,  
Institute for Nonlinear Science,  
University of California, San Diego

1996 - 1998: Associate Research Physicist,  
Institute for Nonlinear Science,  
University of California, San Diego

1992 - 1996: Assistant Research Physicist,  
Institute for Nonlinear Science,  
University of California, San Diego

1987 - 1991: Senior Research Scientist,  
Institute of Applied Physics,  
USSR Academy of Sciences, Gorky, USSR

1986 - 1987: Research Scientist,  
Institute of Applied Physics,  
USSR Academy of Sciences, Gorky, USSR

1982 - 1986: Research Assistant,  
Institute of Applied Physics,  
USSR Academy of Sciences, Gorky, USSR

1980 - 1982: Junior researcher,  
Institute of Applied Physics,  
USSR Academy of Sciences, Gorky, USSR

#### **OTHER AFFILIATIONS:**

- San Diego Center for Systems Biology: Director of the Mathematical Modeling Core 2010-2019
- UCSD Center for Circadian Biology 2009-2020

#### **DISTINCTIONS:**

Fellow of the American Physical Society, 2011

#### **SYNERGISTIC ACTIVITIES:**

Editorial board member for *Physical Review Letters*; *Nonlinearity*; *PLoS ONE*; *Bulletin of Mathematical Biology*; *Chaos, Solitons, and Fractals*

Guest editor: *New Journal of Physics* (2014)

Ad-hoc reviewer for NIH panels, 2015-present

Organizing Committee member, Annual Winter q-bio meetings, 2013-present

Program Committee member, Summer q-bio conferences, 2013-2016

Organizer, q-bio Summer Schools, San Diego branch, San Diego, July-August 2012-2016  
Organizer and Chair, focus sessions at the American Physical Society March meetings, 2010, 2012  
Co-organizer, Winter School “Perspectives of Nonlinear Dynamics,” San Diego, January 2012  
Organizer, International conference “Living Nonlinear Dynamics”, San Diego, April 21-23, 2011  
Organizer, Minisymposium “Dynamics in Cell Biology”, Dynamics Days-Europe, Berlin, 2006  
Organizer, Minisymposia SIAM Conference on Applications of Dynamical Systems, Snowbird, 2003, 2017  
Co-Chair, Gordon Research Conference on Granular Flows, 2002  
Co-Chair, Annual Winter Schools on Communications with Chaos, San Diego, 1999-2003  
Member of Organizing Committee, Winter Schools on Nonlinear Waves, Gorky, USSR, 1985, 1987, 1989  
Member of Organizing Committee, Fall Schools on Methods for Hydrophysical Research, Moscow, 1988, 1990  
Senior lecturer, Gorky State University, Gorky, USSR, 1988 - 1991  
Visiting professor, Université de la Méditerranée, Marseille, France, June, September 2007, June 2009  
Visiting Scientist, Hebrew University of Jerusalem, November, 2006  
Visiting Scientist, Max Planck Institute for Physics of Complex Systems, Dresden, Germany, June-July, 1999  
Visiting Scientist, Weizmann Institute of Science, Rehovot, Israel, April, 1996  
Visiting Scientist, Bar-Ilan University, Tel-Aviv, Israel, May-June, 1994  
Visiting Scientist, Royal Netherlands Meteorological Institute, Utrecht, Netherlands, May - June, 1991  
Visiting Scientist, Institute for Coastal Hydrodynamics, Gdansk, Poland, January, 1989, July, 1989  
Member of UC MEXUS-CONACyT review panel, 2002, 2004  
Consultant to Recording Physics, Inc. (1997-2002), Chaos Telecom, Inc. (2002-2005), Foster-Miller Inc. (1996-1999), Information Systems Laboratories, Inc. (2003-2006,2008)  
Scientific referee for *Nature*; *Nature Microbiology*; *PNAS*; *Science Systems*; *Biophysical Journal*; *Molecular Systems Biology*; *Cell Systems*, *PLoS Computational Biology*; *PLoS ONE*; *ACS Synthetic Biology*; *Physical Review Letters*; *The Physical Review E*; *Physics Letters A*; *Europhysics Letters*; *European Journal of Physics*; *European Physical Journal B*; *Chaos*; *Nonlinearity*; *Physica D*; *Journal of Fluid Mechanics*; *Journal of Statistical Physics*; *Physics of Fluids*; *IEEE Transactions on Circuits and Systems*; *American Journal of Physics* and others

#### **PUBLICATION SUMMARY:**

Papers in peer-reviewed journals: 200+

Books: 4

U.S. Patents: 6

ISI citation index: 13000; h-index: 60

Google Scholar citation index: 27300; h-index: 77

### **INVITED SPEAKER AT:**

IUTAM Symposium “*Nonlinear Deformation Waves*”, Tallin, Estonia, May, 1982

International Conference “*Nonlinear and Turbulent Processes in Physics*”, Kiev, Ukraine, October, 1987

Euromech Colloquium #241 “*Nonlinear Waves in Active Media*”, Tallinn, Estonia, May, 1988

5th Liquid State Conference on Turbulence of the European Physical Society, Moscow, USSR, October, 1989

International Workshop “*Nonlinear World*”, Kiev, Ukraine, October, 1989

XV EGS General Assembly, Copenhagen, Denmark, April, 1990

Fall School “*Methods for Hydrophysical Research*”, Kaliningrad, USSR, September, 1990

XVI EGS General Assembly, Wiesbaden, Germany, April, 1991

International Workshop “*Nonlinear Water Waves*”, Bristol, England, October 1991

NSF-CBMS Conference “*Weak Turbulence and Nonlinear Waves*”, Cleveland, Ohio, May 1992

International Workshop “*Spatially Extended Nonequilibrium Media*”, Santa Barbara, July 1992

UCSD/Nizhni Novgorod Nonlinear Science School, San Diego, California, January 1993

NATO Advanced Research Workshop “*Spatio-Temporal Patterns in Nonequilibrium Complex Patterns*”, Santa Fe, New Mexico, April 1993

FSU-USA Chaos conference, Woods Hole, Massachusetts, July 1993

2nd Experimental Chaos Conference, Washington D.C., October 1993

Technion, Haifa, Israel, June 1994

Weizmann Institute of Science, Rehovot, Israel, June 1994

Physics Colloquium, California State University, Long Beach, October, 1994

Instituto Nazionale di Ottica, Florence, Italy, April, 1995

Institut Non-Lineaire de Nice, France, April, 1995

SIAM Conference on Dynamical Systems, Snowbird, Utah, May 1995

Weizmann Institute of Science, Rehovot, Israel, April 1996

V International Bar-Ilan Conference “*Frontiers of Condensed Matter Physics*”, April 1997

Complex Systems Seminar, UCSD, May 1997

UNED, Madrid, Spain, May 1997

SIAM Conference on Dynamical Systems, Snowbird, Utah, May 1997

SPIE Annual Meeting, San Diego, July 1997

Center for Nonlinear Dynamics, University of Texas, Austin, September 1997

Applied Mathematics Colloquium, University of Colorado, Boulder, February 1998

APS March meeting, Los Angeles, March, 1998

Theory Workshop on Granular Materials, Argonne National Lab, April 1998

Energy Sciences Conference, Argonne National Lab, May 1998

Workshop on Physics of Granular Matter, Pisa, Italy, October 1998

AMS Fall Western Sectional Meeting, Tucson, AZ, November 1998

Physics Colloquium, San Diego State University, November 1998

Oak Ridge National Laboratory, March 1999  
Workshop on Topological Defects in Nonequilibrium Media, Dresden, Germany, July 1999  
International workshop on combustion “Flameday-1999”, Rome, Italy, November 1999.  
DOE BES Workshop “Complex Interactions in Granular Materials”, Argonne National Laboratory, April 7-8, 2000.  
Centro de Investigaciones en Optica, Leon, Mexico, September 19, 2000.  
Istituto Nazionale di Ottica, Florence, Italy, October 23, 2000  
NOLTA-2001, Miyagi-Zao, Japan, Oct.27-Nov.1, 2001  
Northwestern University, Evanston, March 15, 2002  
NATO Advanced Research Workshop “Stochastic Systems: From Randomness to Complexity”, Erice, Italy, July - August, 2002  
Workshop “Formation of Structures in Granular Matter”, Lorentz Center, Leiden, Netherlands, August 2002  
Center for Nonlinear Dynamics, Georgia Tech, October 25, 2002.  
MEDYFINOL-02, Colonia del Sacramento, Uruguay, December 2002.  
2nd Workshop on Granular Flow and Kinetics, Argonne, January, 2003  
NATO Advanced Study Institute “From Pattern Formation to Granular Physics and Soft Condensed Matter”, Benasque, Spain, August 2003  
International Conference “Topical Problems of Nonlinear Wave Physics”, N.Novgorod, Russia, September 2003.  
UCLA, Physics Department, October 2003.  
Southern Workshop on Granular Materials, Pucon, Chile, December 2004.  
Workshop “Stochastic systems with delay and memory”, Wittenberg, Germany, 2-5 February 2004.  
Winter school “Nonlinear Waves - 2004”, Nizhni Novgorod, Russia, March 2004.  
Pan-American Advanced Studies Institute (PASI) on Modern Challenges in Statistical Mechanics II, Albuquerque, New Mexico, March 2004.  
UCSB, Chemical Engineering Department, June 3, 2004  
SIAM Life Sciences Conference, Portland, July, 2004  
Workshop “Transport and Self-Organization in Complex Systems”, Porto Alegre, Brazil, August 8-12, 2004  
Workshop “Fundamentals of Self-Assembly in Complex Materials: Self-organization and Continuum Models”, Argonne National Lab, Argonne, August 25-26, 2004.  
APS March meeting, Los Angeles, March 2005  
7th SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah, May 23-26, 2005  
SPIE Conference “Fluctuations and Noise”, Austin, Texas, May 26-27, 2005  
Dynamics Days Europe, Berlin, Germany, July 25-28, 2005  
Workshop “Transport and Pattern Formation”, Joao Pessoa, Brazil, August 7-12, 2005  
Lecture course at the Consortium for Americas, University of New Mexico, Albuquerque, November 2005  
6th Crimean School and Workshops “Nonlinear Dynamics, Chaos, and Applications” 15-26 May, 2006, Yalta, Crimea, Ukraine  
Workshop “Constructive Role of Noise in Complex Systems”, Dresden, Germany, July 16-21, 2006.

Scripps Institution of Oceanography Theory seminar, La Jolla, February 2, 2007.  
March Meeting, American Physical Society, Denver, March 6, 2007.  
Spring School on Biological Networks, Les Houches, France, April, 9-20, 2007.  
Workshop “Multiscale Modeling of Self-Organization in Active Biological Systems”, Argonne National Laboratory, 28-30 April 2007  
Workshop “Bifurcations and symmetries in Genetics and Neuroscience”, CIRM Luminy, Marseilles, June 11-12, 2007.  
IMA Workshop “Organization of Biological Networks”, Minneapolis, March 3-7, 2008.  
Workshop “Chaos and Dynamics in Biological Networks”, Corgese, Corsica, May 3-10, 2008.  
IMA Workshop “Stochastic modeling of Intracellular Networks”, Minneapolis, May 11-13, 2008.  
Workshop “Self-organization and dynamics of active matter”, Institut Henri Poincare, Paris, January 26-30, 2009.  
SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah, May 16-20, 2009.  
SAM09, I2CAM “Soft Active Materials: From Granular Rods to Flocks, Cells and Tissues” Syracuse, NY, May 18-21, 2009.  
University of Marseille, Marseille, June 2009.  
XXXIX Winter Meeting on Statistical Physics, Taxco, Mexico, January 5-8, 2009  
BIRS Workshop “Multi-scale Stochastic Modeling of Cell Dynamics”, Banff, Canada, January 17-22, 2010  
International conference “Nonlinear Dynamics: New Directions”, Guanajuato, Mexico, May 11-14, 2010  
Yale University, Physics seminar, August 24, 2010  
Chronobiology Workshop, San Diego, November 8, 2010  
MBI Workshop “Dynamical Systems in Biosciences”, Columbus, OH, March 21-25, 2011  
Oakland University, Physics colloquium, April 14, 2011  
Northwestern University, Applied Math colloquium, May 9, 2011  
Workshop on “Collective Dynamics and Pattern Formation in Active Matter Systems”, Dresden, Germany, September 12-16, 2011  
XII Latin-American Workshop on Nonlinear Phenomena (LAWNP 2011), San Luis Potosi, Mexico, October 10-14, 2011  
MBI Workshop “Dynamical Systems in Biosciences”, Columbus, OH, October 23-28, 2011  
APS March Meeting, Boston, February 27 - March 3, 2012  
Third International Workshop-School, “Chaos and Dynamics in Biological Networks”, Corgese, Corsica, May 28 - June 2, 2012  
6th q-bio Conference, Santa Fe, New Mexico, August 7-12, 2012  
International Conference on Theory and Applications in Nonlinear Dynamics ICAND2012, Seattle, WA, August 26-30, 2012.  
UC Riverside, Neurobiology colloquium, November 2012  
“Understanding Cell Behavior through Single Cell and Single Molecule Biology”, Albuquerque, NM, January 10-12, 2013  
“Frontiers in Genomics”, Cuernavaca, Mexico, March 14-18, 2013  
University of Houston, April 5, 2013  
Georgia Tech, Math seminar, April 2013  
Workshop “Information, probability and inference in systems biology” (IPISB 2013), Edin-

burgh, July 2013  
Center for Theoretical Biological Physics, UCSD seminar, October 14, 2013  
APS March meeting, Denver, March 3-7, 2014  
Young Scientist Symposium, IST, Vienna, May 2014  
7th Chaotic Modeling and Simulation International Conference (CHAOS2014), Lisbon, Portugal, June 7-10, 2014  
Dynamics Days, Houston, January 9-11, 2015  
CCB Symposium: From Cells to Clinic, UCSD, February 26, 2015  
3 invited lectures, UASLP, San Luis Potosi, Mexico, March 9-14, 2015  
Universite Paris-Diderot, Paris, April 5, 2015  
Ecole Normale Superieure, Paris, April 7, 2015  
Université du Havre, Le Havre, France, April 9, 2015  
2015 Conference on Applications of Dynamical Systems, Snowbird, Utah, May 17-21, 2015  
8th International Conference on Engineering of Chemical Complexity, Garching/Munich, Germany, June 22-25, 2015  
IMA Workshop “Reflected Brownian Motions, Stochastic Networks, and their Applications”, June 25-27, 2015  
9th Summer q-bio school, Fort Collins, Colorado, July 8, 2015  
Material Science Division Colloquium, Argonne National Laboratory, January 7, 2016  
International Workshop “Collective Dynamics in Microorganisms and Cellular Systems”, Sde Boker, Israel, May 22-25, 2016  
Workshop “Advances in the collective behaviour of complex systems”, Potsdam, Germany, September 1-3, 2016  
Max Planck Institute (MPI) for Terrestrial Microbiology colloquium, Marburg, Germany, September 5, 2016  
Gordon Conference “Statistical Physics in Biology”, Ventura, CA, January 8-13, 2017  
BioPhys-2017 conference, Mexico City, May 17-20, 2017  
11th Summer q-bio school, Fort Collins, Colorado, June 5-9, 2017  
Molecular and Computational Biology seminar, USC, Los Angeles, September 14, 2017  
Applied Math Colloquium, University of Arizona, Tucson, November 3, 2017  
DPG Spring Meeting, Berlin, Germany, March 10-16, 2018  
Predicting Transitions in Complex Systems, Dresden, Germany, April 23-27, 2018  
EMBO/EMBL Symposium “Biological Oscillators”, Heidelberg, Germany, June 3-5, 2018  
7th International Conference on Nonlinear Science and Complexity, San Luis Potosi, Mexico, July 14-17, 2018  
Penn State University, Bioengineering seminar. November 29, 2018  
Workshop “Physics of Active Matter”, Vina del Mar, Chile, July 15-15, 2019